GrummanWorld

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F-14D Team Ignores Distractions, Keeps On Schedule

In Washington, D.C., Grummanites have been battling the proposal by Defense Secretary Richard Cheney to halt production of the F-14D Tomcat. Meanwhile, in Bethpage, L.I., Grummanites have kept working hard on the development of the systems that will be on board this sophisticated Navy fighter.

Since November of 1987, the F-14D has been flown at Calverton by combinations of Grumman and Navy flight crews, with no slips in schedule. These developmental flight tests debug the F-14D's on-board electronics; the software for these systems is so complex, it must be created in six increments. Right now, development of the fourth package is almost complete and work on a fifth is well under way.

The F-14D critical design review is slated for mid-July. In addition, a Navy operational test and evaluation squadron will conduct flight tests of software package no. 4 later this month.

"We have stayed well ahead of the contract requirements," says Joe Van de Wetering, F-14 engineering director. "The fourth software tape includes 68 percent of the aircraft's systems. Under the contract, we had to provide 60 percent.

"The contract also calls for 118 weapon-replaceable assemblies — avionics hardware — when the development program is finished next year," he says. "We've completed the software development and integration for 105 of those."

"That translates into roughly 479,000 software lines, which is a massive amount," says Dennis Carter, systems and software project engineer for the F-14D. "There are 19,000 signals in all — pieces of information that get passed from one processor to another on the F-14D databus. In addition to developing the software to make that all happen, we have to thoroughly test to ensure all those interfaces are correct."

That keeps lots of people busy in the F-14D lab, which is part of Bethpage's Building 14. When problems occur in software code, they are usually subtle. Any bugs or glitches that pilots report in their post-flight debriefs have to be investigated. Often, that means

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Busy Development Project. *Steve Cirone works in Building 14's F-14D Avionics Development Lab. These Sparrow missiles will be used for flight simulations and mock firings in the lab, in order to integrate their electronics and software with the aircraft. (Photo by Bob Settles)*

Coast Guard Hawkeyes Moving To St. Augustine

The U.S. Coast Guard is transferring its drug interdiction squadron, which operates two E-2C Hawkeyes, to St. Augustine, Florida. It will fly out of St. Augustine airport, which is also the home of Grumman Aircraft Systems' St. Augustine Operations.

To support the squadron in St. Augustine, the Coast Guard awarded Grumman an $8.7 million contract. The contract covers the period of May through September of this year and four option years. It requires Grumman to provide hangar facilities, engineering support and crash, fire and rescue services to the squadron. Though no additional people will be hired for this program, some Grummanites from Field Engineering will be assigned to support the squadron.

"We are extremely pleased to be part of the national effort to stop the flow of drugs into this country," says Frank Leone, Aircraft Systems vice president-St. Augustine Operations.

One of the reasons for choosing

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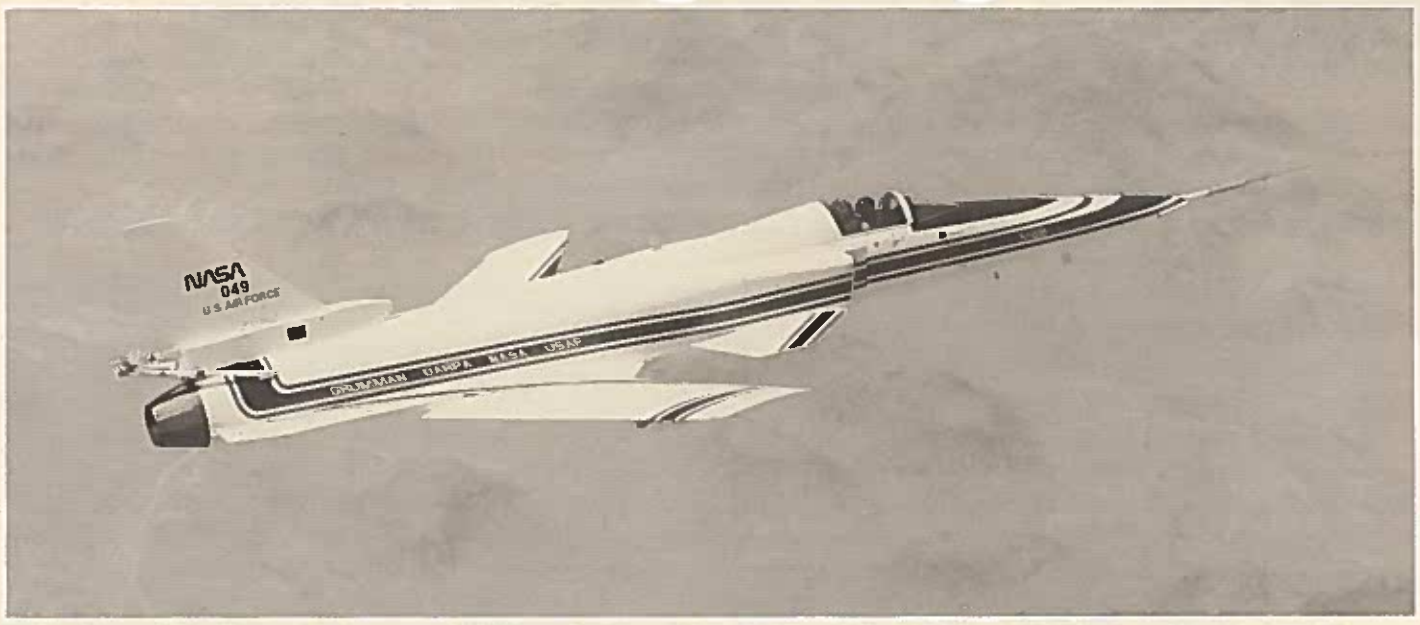
Second X-29 Begins Flight Tests



High Above The Desert. *The second X-29 made its maiden flight on May 23, from NASA's Ames-Dryden Flight Research Facility at Edwards AFB in California. This X-29 is identical to X-29 No. 1, except for some instrumentation changes, and the installation of a spin recovery parachute for added safety. (NASA Photo)*

On May 23, the second X-29 forward swept wing technology demonstrator made its first flight. With NASA test pilot Steve Ishmael at the controls, the X-29 lifted off the runway at the Ames-Dryden Flight Research Facility at Edwards Air Force Base in California at 2:21 p.m local time. The flight lasted 52 minutes.

"We had no real problems with the plane during the flight," says Grumman's X-29 Program Director Bill Mebes. During the flight Ishmael took the plane to over 29,000 feet and reached a speed of .65 Mach — about 330 nautical miles per hour.

This was the first of four check flights to test the plane's systems, instrumentation and perform two in-flight spin chute deployments. Ishmael and Air Force Maj. Al Hoover will split the piloting duties for the check flights. Once the plane begins its regimen of high angle-of-attack research flights, Grumman test pilot Rod Womer will also do some of the flying.

Grumman is under contract to the Air Force and NASA for this flight test program. About a dozen Grummanites are working on the program at Ames-Dryden now, though Grumman sends specialists there when they are needed.

The only visible difference between Grumman's two X-29s is the addition of the spin chute in the second plane. This lets the pilot regain control of the plane if it goes into a spin during a high angle-of-attack maneuver. Although the instruments in the two planes are similar, they aren't identical; No. 2 contains an additional instrument for accurate attitude data.

The X-29s are fly-by-wire aircraft. The pilot's commands are translated by computers into the mechanical motions of the control surfaces. The computers also adjust the control surfaces 40 times a second to compensate for the inherent instability of the plane.

The flight control software in X-29 No. 2 for the first flight was the same as the software No. 1 finished with. After the check flights are done, a new block of software will be put into the plane for the test flights at high angle-of-attack. This is the angle the nose of the plane is pitched up in relation to the actual direction the plane is moving. The software limited the first X-29 to 22 degrees. Software for the second aircraft will let the pilot pitch up the nose as much as 70 degrees.

Meanwhile, X-29 No. 1, Grumman's first X-plane, has finished its work. It was flown a total of 242 flights and was the first forward swept wing aircraft to go supersonic. "In almost all cases the plane's performance equaled or exceeded our expectations," says Mebes. He says it may fly again under another test program, but that's just in the discussion stage.

Drug Busters Moving To St. Augustine Ops

Summertime Move. *By August, the U.S. Coast Guard will move its squadron of E-2C's to Grumman's St. Augustine Operations in Florida.*

(Continued from page 1)

St. Augustine as the squadron's new home is the E-2C rework operation that Grumman has there. Being close to E-2C technical support is a major requirement. The squadron's current home is Naval Air Station Norfolk, Virginia. The Coast Guard will move the 100-member team to Florida in August.

The Coast Guard is moving the squadron nearer the Caribbean and the Bahamas, its principal area of operation. Based in Norfolk, the squadron was spending nearly a fifth of its air time "commuting."

This is St. Augustine Operations' second venture with the Coast Guard. Under a contract it won last August, it is modifying several HH-65A Dolphin helicopters. It is equipping the helicopters with a special deck locking system that allows the choppers to safely shut down after landing on Coast Guard cutters at sea.

Unit Values

The Grumman Employee Investment Plan's unit values as of March 31, compared to February 28, are:

Equity Fund
4.958 up from 4.797

Fixed Income Fund
6.394 up from 6.374

Guaranteed Income Fund
3.032 up from 3.007

Company Stock Fund
$21.66 up from $20.19

Has It Been 20 Years Since First Lunar Landing?

The Long Island section of the American Institute of Aeronautics and Astronautics is sponsoring a special evening on Saturday, July 15, to commemorate the first manned lunar landing.

A buffet dinner will take place from 5:30 to 7:30 p.m. at the Cradle of Aviation Museum on the campus of the Nassau Community College. Attendees can view the exhibits, including a NASA/Grumman Lunar Module. The buffet costs $12 per person when purchased in advance; the fee is $15 at the door.

From 8 to 10 that same evening, several people who participated in the Apollo program will talk about their experiences. Speakers include: former Grumman President Joe Gavin, who was vice president and Lunar Module program director during the Apollo program; Data Systems Vice President Tom Kelly, who was LM engineering director; and Space Station Program Support President Fred Haise, who was a NASA astronaut on the Apollo and Space Shuttle programs.

This event will be held in the Nassau Community College Student Union auditorium, adjacent to the Cradle of Aviation Museum. Admission is free, but reservations are required.

For more information, call Lois Lovisolo, 575-2401.

I Heard It At The Pin Meeting

O'Brien Talks About Defense, Debt, Excellence

On Friday, May 26, and Thursday, June 1, Grumman Chairman John O'Brien met with Grummanites celebrating their service anniversaries with the company. Some excerpts from the question-and-answer session follow.

What's Grumman doing to slow down the attrition rate of people with critical skills?

O'Brien: Everything we can. But it's very tough for me to convince you not to leave when the grass appears to be greener in other places. Or when you decide to marry the engineer you've worked next to for five years and you both can't afford to buy a house. Or when you kick your roommates out and the two of you can't afford the apartment you and your three roommates had. I can't underwrite your buying a house; I can't even get the banks we do business with to underwrite it enough to make a difference. I didn't win the Shoreham fight, so we're all going to pay more for electricity.

You've seen me fight publicly with the elected officials from

'The backlog today is $7.8 billion. Somebody has to deliver that product.'

both Nassau and Suffolk Counties. I'm making some headway. They are making some budget cuts; there appears to be a tax revolt going on. But that's not going to solve our problem rapidly. All I can say to the people who are nervous and want to run is, "Think about it. The grass isn't always as green as it looks." Hughes just announced a massive layoff — 6,000 people. Northrop just finished laying off people. Before we had our layoff this year, Lockheed laid off 7,000 people.

How does the plant closing law, which went into effect earlier this year, affect Grumman's actions if there is a massive reduction in force?

[Answered by Bob Foster, director of Personnel]: A company is required to give 60-day notice individually to employees before they are laid off. That's very difficult to do. In trying to place people throughout the company before they get laid off, sometimes, you don't know until right at the end who is going to be laid off. Certain exceptions to the law allow us to reduce the work force without advance notice — such as a contract cancellation.

O'Brien: Let me correct something. I know 10,000 out of 30,000 people, the number projected if we lose the F-14D, is a massive number. But it will take place over four years and lots of things could change to impact that number. Joint STARS will go into production — I know not much of it is done here, but some of it could. BSTS may be won. This is a long cycle — Fiscal 1990 F-14s get delivered in 1992.

In our discussions with Congress, have we proposed substituting the F-14A Plus for the F-14D? It may give us a lower unit cost.

O'Brien: It doesn't give us a significantly lower unit cost. The

'The runway will still be closed: we just don't know exactly when.'

real competition for the F-14 has been the mythical NATF [Navy Advanced Tactical Fighter], another multibillion dollar boondoggle to try and make an Air Force airplane into a Navy airplane — even though this industry has failed five times to accomplish that in the last 35 years. And I know that now the NATF is big enough that it will sink the carrier, like the F-111 got when we tried to do it with General Dynamics as the Air Force prime.

Going backwards in the technology in an F-14 is not the right way to go; we've really got to incorporate as much of the technology of the ATF in the Tomcat 21 as we can if we want to compete with the NATF.

Is there any brand new business that you can speak about?

O'Brien: The BSTS is brand new, and still in competition. We still have to win it. Joint STARS is going into production. There's PATS, the Air Force Primary

'I know 10,000 out of 30,000 people is a massive number. But it will take place over four years and lots of things could change to impact that number.'

Aircraft Trainer System for which we're teamed with Agusta. We've got more European nations interested in IFTE, which will be a several billion dollar program before it's finished. There are the options on the Long Life Vehicles contract.

The backlog in the company today is $7.8 billion. Somebody has to deliver that product. Data Systems has several new programs out and will be announced as the winner of another new program in the next two weeks. There's work there — our problem is that it's not in the building and designing of airframes. We've moved gradually into other businesses over the last 10 years, but we planned to keep the aircraft business as large as it was. The majority of our employees work in the Aircraft Systems Division, and most of our production employees.

If we lose the F-14 budget battle, we will not be driven out of business. But we will not be able to compete for future aircraft business.

Grumman spent a lot of money on modernizing Building 3. Is that going to continue?

O'Brien: Right now, I would judge, it's about 20 percent utilized — maybe more because we've just gotten some Boeing subcontract work in there. [Editor's note: Tom McGrath, senior vice president - Product Operations, explains that the plant was designed for three shifts, and under that formula is 25-30 percent utilized. Under a single shift formula, however, that figure becomes 45-50 percent.] We'll continue to modernize the plant where we have work to do, but there's a lot of machinery in that

'Long Island is about on par with any other urban area where the cost of living is high.'

plant that's very poorly utilized. No fault of the people running the plant — we just don't have the business to push through it. That's what we're trying to get out of Boeing. If we continue to get the hours Boeing has promised us, we will continue to upgrade that plant. C-17 work will also be done in that plant. By the way, the C-17 is also under some attack in the Federal budget.

Is there a difference in the cost of manufacturing parts on Long Island as opposed to Texas?

O'Brien: Texas is about 30-40 percent lower than Long Island. The manhours aren't much different either, despite our claim that we have a lot of skills here — we should be able to do it faster. Long Island is about on par with Los Angeles, San Diego, or any other urban area where the cost of living is high. That's why when we bid a new job, part of it has to be done off Long Island so the average is competitive.

In light of the busy production load of Boeing and McDonnell Douglas, have we made appropriate inroads to get a piece of that action?

O'Brien: Yes, we've gotten some work for Building 3 in fabricating subassemblies for Boeing and we're looking to get more. The initial order was 25,000 hours of work; we're looking for a couple hundred thousand. We're considered one of Boeing's best suppliers, since we do a lot of work for them already on 757s and 767s, and did on 727s. We're also talking to them about getting involved in some of

'We have to be tough; we have to be willing to be inconvenienced to win, to stay in business.'

the airline reworks that have to be done to comply with the FAA standards on old airplanes. But you have to price that kind of work marginally. It's highly competitive and doesn't sustain the kind of overheads we need to be a front-line airplane competitor.

I work in Plant 4. Is the move of the E-2 to Calverton still on?

O'Brien: The move to Calverton is still on if we shut down the runway. We've stopped working on the schedule of the move, while we sort out the F-14 problem. But the runway will still be closed: we just don't know exactly when.

What is Grumman now doing with the House Armed Services Committee to get the F-14 reinstated in the budget?

O'Brien: Let me assure you we are working actively with members of the House Armed Services Committee and we have already obtained commitments to support the F-14. Not to support Grumman, but to support the F-14. It's not a jobs-on-Long Island issue, and we all have to recognize that cruelty. If $10 billion is taken out of the defense budget, jobs will be lost somewhere in the nation. It's an issue of national defense priorities, and that's the issue that is going to win the argument. If you have to take the carriers out of the Mediterranean in the mid-'90s because you have neither F-14s nor the magic NATF that's not yet designed, it should be a national defense issue.

Is the proposal effort for the new Air Force trainer still in the works? Would the program end up down south, if we got it?

O'Brien: We are teamed with Agusta, an Italian corporation that has an off-the-shelf aircraft that we think fits the training requirements better than anything else. Our work force on Long Island is best suited to very complex programs. PATS is a very basic, non-systems, trainer. Most of it would probably

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The Pressure's On

'We're Putting Blinders On And Just Getting The Job Done'

(Continued from page 1)

exhaustive tests using one of the lab's two F-14D systems integration test stations. Through flight simulations, the engineers make the problem recur so they can fix it.

The people in the development lab are monitoring the F-14D's budgetary battle with some concern. But they think it will survive.

"We're putting blinders on and just getting the job done," says Ken McCabe, who designs reconnaissance systems for the Tomcat. "People wouldn't be coming in at 6 a.m. if that wasn't the case."

"One might expect a lot of apathy on the F-14D program right now; people could say, 'Gee, we're not going to get the production contract after all'," says Chuck Bolen, a software integration engineer.

"But everybody's putting 100 percent into the project. We have a lot of tight schedules to meet," he adds. "Now more than ever, there's no margin for error."

"This group has been with the F-14D since the beginning," says Art Simendinger, the laboratory project engineer. "We've got a personal stake in making this program a success. I believe if we do a good job on this development, get good reviews from the Navy, we can help turn this situation around."

There are a lot of behind-the-scenes tasks. One group is now writing software documentation in preparation for the F-14D critical design review. In these volumes of books, the engineers detail for the customer just how they get the software code to perform its functions. During the review, the Navy queries the Grummanites on aspects of the documentation.

"Grummanites look on this aircraft as the crown jewel of aviation," says Alan Kocka, project leader for tactical software. "When people in the defense community get up and testify that the F-14D isn't needed, you'd think that it would take the wind out of our sails. But the work is continuing right on schedule."

Some of the engineers from the lab will go to Calverton to support the operational flight test program.

Navy pilots have been involved all along on the development tests, but the operational tests are more like consumer product testing. These fleet pilots from the Pacific Missile Test Center, Point Mugu, California, give their views on how the plane operates: what they like, what they don't like.

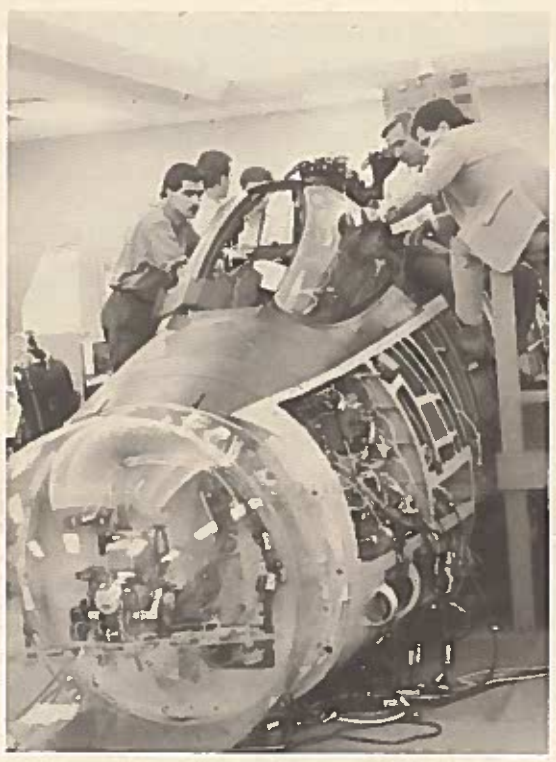
"They don't care what the specification says — that's not their job," says Carter. "What they look for is that the aircraft will be a major improvement to the fleet. We take their comments and make the aircraft better."

For instance, after a previous operational flight test, the pilot reported that the control stick obscured the radar altimeter. The solution: it and several other gauges were replaced with slightly smaller versions. That freed up space so the radar altimeter could be moved.

The development program wraps up next year, but Grumman may then perform pre-deployment upgrades to the aircraft's systems. This would entail giving some additional capabilities to the small numbers of F-14D's entering the fleet at that point.

Carter sees a lot of support for the F-14D among Navy pilots.

"They've flown it, and they want this aircraft next year on a carrier," he says. "They recognize the fact that if the F-14D is no longer a production aircraft, the visibility in Congress and the Navy will go away. Out-of-production aircraft just don't get the attention that new aircraft do."



New And Improved. *Above, Stan Martyna and Art Simendinger study the radar of one of the lab's two F-14D systems integration test stations. The radar system is cased in a protective plastic bubble. At L, Grumman engineers and visitors from Microsoft conduct a simulation on the test station. Below, Alan Kocka monitors the performance of some software during a test. The F-14D has been a massive software development and integration project. (Photos by Bob Settles)*

Grumman Launches Letter Writing Campaign

On June 1, Grumman enlisted the aid of all Grumman people — including retirees — in a letter-writing campaign to help put funding for new F-14D's into the fiscal 1990 defense budget.

Throughout the country, there are over 29,000 Grumman employees and 11,000 retirees. They have been asked to send letters to the 20 members of the Senate Armed Services Committee.

Since April when Defense Secretary Dick Cheney submitted the fiscal 1990 budget without funding for F-14D production aircraft, letters of support have been sent to Chairman John O'Brien and to Grumman World. Here are excerpts from a sampling of those letters:

I sincerely feel that our company has a lot to offer our Navy — a high quality product, the F-14. And, we need this beautiful plane to help maintain our fleet readiness throughout the world. I stand ready to assist in any way possible.

James K. Higgins (retiree)
Levittown, N.Y.

I constantly read the newspapers about Grumman's good and bad news. Twenty-five years of service does not disappear just because I am retired. Please let me know if there is any letter writing to be done.

Andrew DiMarco (retiree)
Farmingdale, N.Y.

When the powers in Washington decide products of less capabilities should replace superior products just because they cost less, something is very wrong.

Arthur C. Burkhardt (retiree)
New Hyde Park, N.Y.

Budget Battle Update is outstanding. Keep it up and keep them coming.

Charles L. Kalaghan (retiree)
St. James, N.Y.

I am still hoping the Grumman Corporation won't be canceled and I am reading every bit about it in the newspaper. I hope the newspaper can print more evidence why not to cancel the Grumman Corporation. So I will keep my fingers crossed for you.

Bobby Rehm
Age 12
Huntington, N.Y.

The Administration's plan to curtail production of the F-14 Tomcat must be welcome news to Col. Khadafy. The Tomcat has proved itself. Perhaps in addition to briefing books, each member of Congress should also receive a video cassette of Top Gun. Best wishes for your success in getting funds restored.

Samuel Feldman (retiree)
Cranbury, N.J.

I would like to suggest that all members of the Armed Services Committee as well as influential senators and representatives be invited to Plant 7 to view the A-6F and the radar flight results tape.... We must make the people who vote on the budget aware of what is available so they can make logical choices.

Bob Pangallo
Building 40
Melville, N.Y.

The U.S. government can go into a deal with Japan but can't quite make a commitment to the U.S. people on jobs and the like. They can lend money all over the world.... What would happen if all the little American guys and gals got up in arms and said we aren't going to pay our income taxes anymore? Then where would the government be?

Peter J. Brenna (retiree)
Smithtown, N.Y.

Received your Budget Battle newsletter. Please keep us retirees informed. I can write a lot of great letters. Just tell me who to write to, when, and where. I'd be glad to help.

Bud Parke (retiree)
Machipongo, Va.

Budget Battle

Grumman World's Budget Battle Update keeps you on top of what Grumman and its supporters are doing to keep the A-6, F-14 and EA-6B aircraft in the Fiscal Year 1990 budget.

The update is sent to all Long Island mailrooms. The publication is also sent by facsimile to Grumman sites around the country for local reproduction. If your mailroom doesn't have copies, call us at (516) 575-8999.

We've Got A New Look

Have you noticed that Grumman World is now being printed on a different type of paper?

The paper we used to use was coated; the new paper is a newsprint stock called Baxter Text. It costs a lot less money than the old paper. It's not quite as snowy white, but the photographs reproduce just as well, if not better.

By the way, many people have called the Grumman Recycling Program office to ask if the new Grumman World is recyclable. It is not recyclable at Grumman. You can't put the new Grumman World in your green Grumman Office Paper Recycling folder. That's for high grade office paper only. However, if you bring your Grumman World home, it can be recycled with other papers, if your town has a newspaper recycling program.

There is not enough newsprint paper at Grumman to warrant the expense of setting up a recycling program for this type of paper. Newsprint is a much lower grade than office paper, so it is not as profitable for recycling companies.

I Heard It At The Pin Meeting

(Continued from page 3)

be built someplace else, although components of it would be built on Long Island, as well as the support equipment and training systems that go with it.

It seems that our debt keeps increasing and it's a terrible stranglehold on us. How will we eventually reduce it?

O'Brien: Well, it's just like your debt at home. I either pay you more money so you can afford the debt, or you reduce the expenses to afford the debt. A company has to increase profits, or cut expenses.

The profits in this company have been sick for years - that's poor performance. Last year, our rework bill as best I could calculate was $27-30 million. That's a dollar a share before taxes — and a lot of debt reduction if we had it.

That's what GQ is all about. We have to reduce expenses if we want to stay in business. We have to do things right the first time. We've also cut back on R&D to reduce our expenses. We've cut back on capital spending where we don't need it.

I work in Melville on the A-6. The group is moving out to Calverton, and a number of us don't want to go. We were told that we would not be able to trade places with other people in the company who do want to work there. Is this a policy and can you explain why it was put into effect?

O'Brien: We're trying to find ways to minimize the inconvenience of the A-6 people who've been asked to move. However, we can't permit people to find their own replacements. We don't want the chaos and expense: it is disruptive to the delivery of the product and costs us profit money, which increases our debt.

I'm sorry. When you're supposed to be working, you cannot devote hours to finding someone willing to go to Calverton — who may be able to do your job but hasn't worked on the A-6 long enough — while I'm trying to get Congress to buy A-6s. Our contracts are all fixed-price, with tight margins, and we're not making the profits our competitors are making.

I don't think the policy is unreasonable with the problems we're facing. We need everybody rowing the boat — even if it hurts, even if it's inconvenient. It's inconvenient for me to get up at five o'clock in the morning, spend all day in Washington, then come back at 10 o'clock at night.

But it's my job, and I'll do it every day of the week if it's necessary to get the F-14 and A-6 back in the budget. We have to be tough; we have to be willing to be inconvenienced to win, to stay in business.

Just recently, bonuses were given out to production people in Buildings 1 through 4 and some of the support groups in Corporate Services. But not all of them. They ranged from $35 to $185. Why didn't they give an equal amount to all the people and include everyone?

O'Brien: Because they weren't all hacking it. Those bonuses were given out on a system that's been active in Grumman for a long time, called Master Craftsmanship. If you decrease rework or the number of manhours to do the job, you get to share in the savings.The bonuses were given to people who beat the targets. As soon as they beat the target, we dropped the target. That's how it works.

We're doing that more and more. We whittled the cost of remodeling the old Credit Union building down to about 40 percent of the original estimate. Then, we talked to the people who were doing the work and said, "You'll get 50 percent of what you save." They are 25 percent under budget and 25 percent under schedule. That tells me we can do it if we decide to do it.

Red Dog Express Takes Bite Out Of Remodeling Costs

BETHPAGE, N.Y. — The remodeling of the old Credit Union building is more than three-quarters complete — and the construction crew may soon get bonus checks for staying ahead of schedule and under projected cost.

The project, including relocating people, is scheduled to be finished the first week of July. It is part of a Grumman Quality experiment: when it's complete, the 35 people on the team will split 50 percent of the calculated cost savings. The project stemmed from a GQ action team in Business Operations working on the process of rewards and penalties in that department.

Means Grumman Quality

"The skills we are using for this job aren't unusual — such as plumbing, electrical, carpentry, masonry, painting," says Art Hall, construction manager. "What's more important is the way we've approached this job. Grumman Quality teaches that you must do 'right things right' — doing the right things the right way.

"In my experience, I've found construction teams are always motivated to do a good job — the money is just an extra incentive," he adds. The group has adopted the nickname "Red Dog Express," taken from a football term describing a blitz on the quarterback.

The team has completed all the basic construction work, including the installation of electronic fire alarms and carpeting, and cloth partitions.

Every few weeks, Hall distributes a report to team members, updating them on their progress. The report includes a chart that tracks the money spent on the project versus the amount budgeted for it — the team is now working about 20 percent under cost.

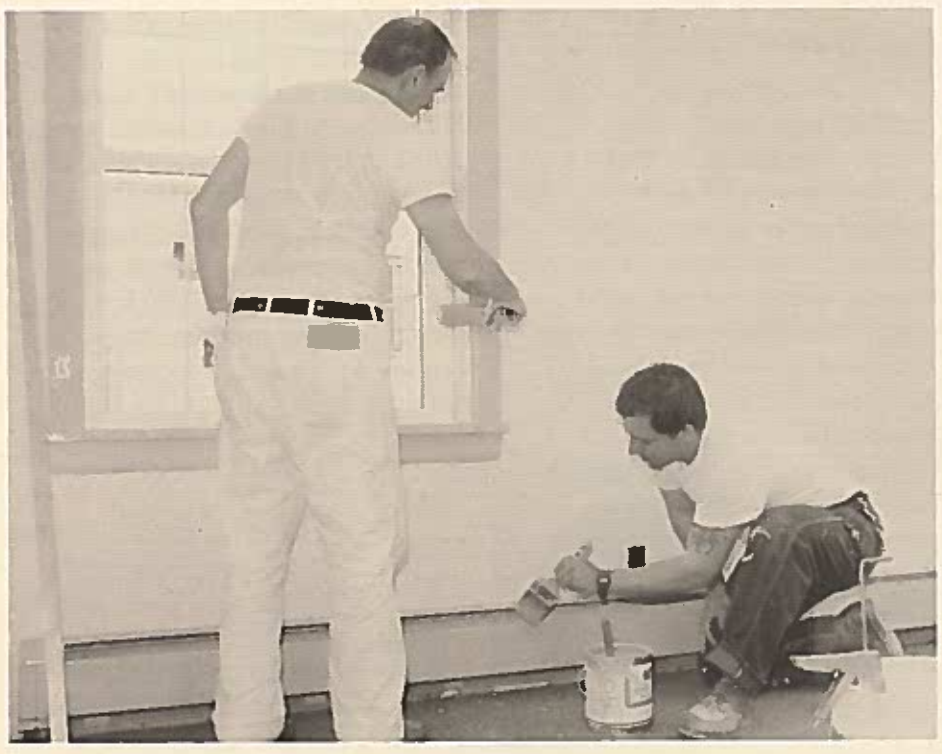
"A lot of them are on rotation," explains Hall. "A guy will finish up here and go somewhere else and do another job. But since he's still part of the Red Dog Express, it's important to keep him informed.

"We've had excellent support from Procurement on this job — in order to keep on schedule, it's very important to have your materials when you need them," says Hall. "The support from our engineering team has been great. This building used to be a bank, so there have been some solid concrete walls to deal with, and there are two full-size vaults. Security will use one of them for material that has to be locked up."

Furniture will be moved in two stages — the ground floor on one weekend, the basement the next. The last thing the team will do will be to install computers for the Travelers Insurance people, who will share the building with Corporate Security. These systems will be linked to that company's headquarters in Connecticut.

"The last 10 percent of the job will be the most challenging," says Art Hall, construction manager of the team. "That's when the little things come up — you have to shave a door that's not fitting right, fix a light ballast, that sort of thing. Those things tend to be time consuming.

"But when we're complete, we'll still be significantly under budget and ahead of schedule," says Hall.



The Buck Stops Here. *Painters Bob Reisert and Scott Wilson are on the team remodeling the old Credit Union building in Bethpage. The team is saving money and time as part of a Grumman Quality (GQ) incentive project. (Photo by Bob Settles)*

Technical Services Teamwork. *Several members of the GQ team addressing the proposal question at Grumman Technical Services Division in Florida are: (L to R) Lowell McMann, John Schwarz, Norma Shear (facilitator), Kristy Wetzel and Stu Cornell (coordinator).*

Titusville GQ Team Solves Proposal Problem

TITUSVILLE, Fla. — For several months, a Grumman Quality action team in Technical Services has been looking at ways to win more contracts for the division.

Among the team's developments: a business opportunity checklist, which will enable the division to select the right jobs to bid on; and a flow chart, which will streamline the proposal process and make it more effective. They also developed a presentation about the division's capabilities and background was developed. It is aimed at proposal and marketing teams in other Grumman divisions, to develop interdivisional business.

"Since we started, there has been increased communication between us and the other divisions," according to Mark Morgan, head of GQ for the division. "They're realizing that including us in the initial bid gives Grumman a stronger base, and offers a greater range of services to customers. With Technical Services as an internal supplier, Grumman increases its competitive edge."

Eight Receive New Assignments

The following Grummanites recently received new assignments in their respective divisions:

Aircraft Systems

Bethpage Operations: Lamar Cress, plant manager, Bldg. 4.

Integrated Logistics Support: Peter A. Eckstein, project engineer, Computer Engineering; William F. Marrinan, assistant manager, Customer Supply Requirements; David L. Johnson, group head, Trainer Design and Production Support.

Manufacturing Technology Operations: Frederick W. Neuscheler, direcotr, Administration and Business Management; Arthur L. Deissler, director, Engineering.

Data Systems

Information Services Operations: Robert C. Heise, assistant director, Interactive Systems Group.

Systems Support: Joseph Coniker, assistant director, Grumman Services.

Grumman World — Next Issue: June 23

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Retiree Obituaries

John W. Abrams of 212 Spur Dr. So., Bay Shore, N.Y., died May 5, 1989. He retired in 1977.

Lincoln B. Andrews of 73 Maple Ave., Patchogue, N.Y., died May 16, 1989. He retired in 1975.

Frank A. Anzillatto of 27 Landview Dr., Dix Hills, N.Y., died April 17, 1989. He retired in 1977.

David K. Arnott of 62 Elk Creek Rd., East Meredith, N.Y., died April 11, 1989. He retired in 1974.

Paul H. Babcock of Meadowbrook Rd., North Haven, Sag Harbor, N.Y., died April 15, 1989. He retired in 1983.

Gordon W. Barton of 108 Sims Rd., Auburndale, Florida, died April 1, 1989. He retired in 1982.

Leroy Brown at P.O. Box 139, Kerhonkson, N.Y., died March 1, 1989. He retired in 1971.

Frank V. Caputo of 5 Nova Rd., Bayville, N.Y., died May 9, 1989. He retired in 1987.

Floyd P. Cheshire of 125 Harry Howard Ave., Hudson, N.Y., died May 8, 1989. He retired in 1967.

James A. Christiansen of 52 Periwinkle Dr., Bohemia, N.Y., died April 18, 1989. He retired in 1977.

Joseph P. Corso of 198 Fredrick Ave., Babylon, N.Y., died April 16, 1989. He retired in 1980.

Richard J. Cyphers of 17 Kingsley Rd., Huntington, N.Y., died April 13, 1989. He retired in 1985.

Charles Finlay of 67 Superior St., Pt. Jefferson, N.Y., died April 20, 1989. He retired in 1984.

Ray Fridinger of 8336 Belair Rd., Baltimore, Maryland, died March 22, 1989. He retired in 1969.

Frank Gengenbacher of 8 North Jackson St., Beverly Hills, Florida, died April 5, 1989. He retired in 1970.

Michael R. Granata of 650 East Strawbridge Ave., Melbourne, Florida, died March 7, 1989. He retired in 1966.

John T. Green of 10 Jarvis St., Huntington, N.Y., died April 24, 1989. He retired in 1980.

Peter J. Grubb of 21 Pulaski Ave., Southampton, N.Y., died April 16, 1989. He retired in 1978.

William L. Helmken of One Court St., Selden, N.Y., died March 15, 1989. He retired in 1962.

Osmond A. Henderson of 1212 North 14th St., Ft. Pierce, Florida, died April 30, 1989. He retired in 1987.

France B. Henry Jr. of 1502 E. 57th St., Savannah, Georgia, died April 11, 1989. He retired in 1986.

Edward N. Hoogland of 2639 Martin Ave., Bellmore, N.Y., died April 5, 1989. He retired in 1977.

Charles S. Kewicki of 212 9th St., Hicksville, N.Y., died April 8, 1989. He retired in 1971.

Peter P. Kusky at Rt. 2, Box 822Q10, Pompano Beach, Florida, died April 22, 1989. He retired in 1977.

Alan G. Leavy at Rt. l, Box 239E, Lake City, Florida, died May 17, 1989. He retired in 1977.

Peter Lucchelli of 1591 Andover Dr., Dunedin, Florida, died April 18, 1989. He retired in 1965.

Ian MacDonald of 607 Queens Loop, Lakeland, Florida, died April 25, 1989. He retired in 1968.

Johnnie R. Martin of 704 N. Baker, Lot 23, Alma, Georgia, died April 16, 1989. He retired in 1978.

Nicholas Martino of 60 Nassau Ave., Glen Cove, N.Y., died May 6, 1989. He retired in 1978.

Joseph C. Monteleone of 76 Cedar Rd., Mastic Beach, N.Y., died March 18, 1989. He retired in 1975.

James F. Morgan of 23 Ross Ave., Huntington Station, N.Y., died May 18, 1989. He retired in 1973.

Robert W. Mullaly of 246 Pershing Parkway, Mineola, N.Y., died March 20, 1989. He retired in 1981.

Charles J. Niglio of 3398 NE Jeanette Ave., Jensen Beach, Florida, died March 25, 1989. He retired in 1986.

Anthony J. Parrella of 91 Nelson St., Farmingdale, N.Y., died April 1, 1989. He retired in 1988.

Einer L. Peterson of 190 Jervis Ave., Copiague, N.Y. died March 25, 1989. He retired in 1977.

Wilmer T. Pohley of 7 Melissa Dr., Beverly Hills, Florida, died March 20, 1989. He retired in 1973.

Walter E. Reese of 97 Dartmouth St., Hempstead, N.Y., died April 28, 1989. He retired in 1973.

Harold J. Ress of 17 Muncy Rd., Bay Shore, N.Y., died March 28, 1989. He retired in 1977.

Charles W. Rumpf Sr. of 23 Atlantic Blvd., Key Largo, Florida, died May 15, 1989. He retired in 1978.

Anna Russo of 1880 Meadowbrook Rd., Merrick, N.Y., died March 2, 1989. She retired in 1984.

Benny Satcher of 623 Simmons Ave., Milledgeville, Georgia, died March 10, 1989. He retired in 1987.

Norman G. Saunders of 32 Bear Creek Path, Ormond Beach, Florida, died April 9, 1989. He retired in 1982.

Henry J. Schiebel Jr. at Box 102, Lakeville, Connecticut, died April 8, 1989. He retired in 1969.

Harry W. Schlimper of 143 Loblolly Dr., Route 3, Morehead City, North Carolina, died May 13, 1989. He retired in 1977.

Richard A. Schwier of 98 Marilynn St., East Islip, N.Y.,. died May 5, 1989. He retired in 1988.

Andrew J. Smith of 146 North 18th St., Wyandanch, N.Y., died April 5, 1989. He retired in 1984.

Lewis F. Smith of 609 Edgehill Rd., New Bern, North Carolina, died April 19, 1989. He retired in 1977.

Edward S. Teleweck of 1984 Queen St., North Ft. Myers, Florida, died April 20, 1989. He retired in 1977.

Ernest V. Young of 40 Welcome St., Haverhill, Massachusetts, died April 22, 1989. He retired in 1969.

Grumman Family Picnic Tickets On Sale Now

On July 22, 1969, astronauts Neil Armstrong, Buzz Aldrin, and Mike Collins were on their way home from the moon. Twenty years later on the same date, Grummanites and their families can celebrate the 20th anniversary of man's first lunar landing at this year's Grumman Family Picnic at Calverton, L.I.

A six-foot-high model of the LM will provide a perfect backdrop for family photos. Videotapes of the first lunar landing will also be shown, along with a variety of memorabilia from that era, such as newspaper clippings and photos. A commemorative 23 x 26 inch poster of the LM painting by Grumman artist Bob Whitehead (displayed at the annual shareholders' meeting) will be given out while supplies last.

Tickets are now on sale at all Employee Services offices on Long Island. Admission is $5 per person; children under 12 are admitted free. As in recent years, no cars will be allowed through the gates unless at least one person has a Grumman badge.

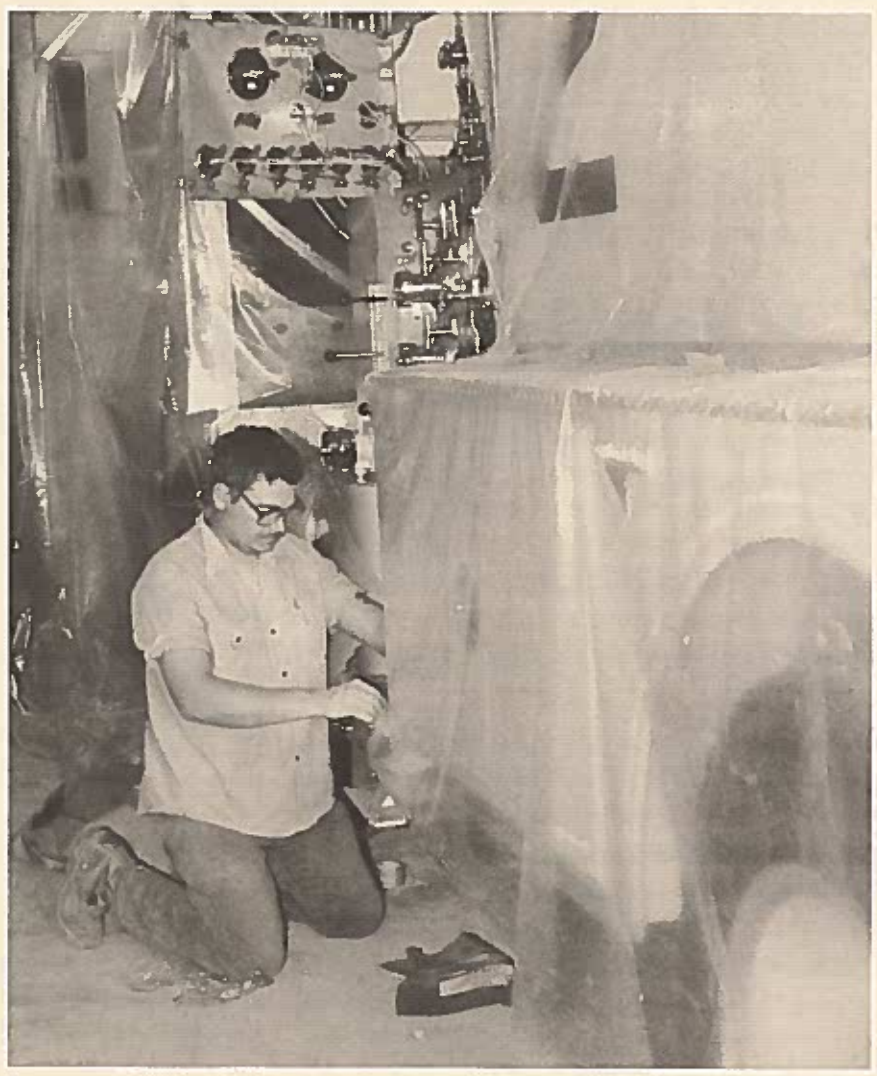
There will be plenty of rides and games to keep you and your family busy. Starting at 10 o'clock in the morning, Recreation will host over 30 races for kids of all ages and adults, too. The competition ranges from wheelbarrow contests to three-legged races.

Plus, there are several kiddie amusement rides, such as a mini-ferris wheel. Older kids can hitch a ride on a miniature train and the carousel.

There is also plenty to eat — unlimited hot dogs, corn-on-the-cob, soda, beer, milk and ice cream. The Grumman Employees Band will play throughout the day. At high noon, the traditional kiddie entertainment gets under way. This year, there will be a magician and an animal show.

More information will appear in the next issue of *Grumman World*.

Kernels Of Fun. *Last year, corn-on-the-cob was introduced to the picnic menu. It's back by popular demand.*



True Colors. *At Emergency Products in Vinton, Virginia, Carter Richardson prepares to paint a Grumman fire truck equipped with a Snorkel water tower. As in aerospace, firefighting-equipment manufacturers sometimes subcontract to each other. The Snorkel products are typically smaller than Grumman's own aerial ladders and can be used on a single engine chassis.*

Plan Ahead, Be Prepared For 1990 Tax Season

Don't be caught off guard next year when you file your 1989 tax return. There are several tax law changes that you should be aware of.

Starting in 1989, children who will be two years old by the end of the year must have a Social Security number, so it can be included on their parent's 1989 tax form. "This requirement used to be only for children age five or older," says Doug Dahlgard, Grumman's director of Corporate Tax. "You can apply for a Social Security number by filing Form SS-5 with the Social Security Administration."

Another important change in the tax rules involves dependents who are full-time students. Beginning in 1989, you cannot claim an exemption for a son or daughter who is 24 years old by the end of 1989, and had income over $2,000. There used to be no age or income limit for full-time students. "You'll probably want to adjust your withholding if this new law affects your family," says Dahlgard.

In recent years, tax rules have been gradually stiffened in the area of tax credit for child care and dependent care. For most people, dependent care would involve taking care of their elderly parent or a sick spouse.

Beginning in 1989, care providers — such as babysitters, day-care centers or in-home nursing services — must give their taxpayer identification number (TIN) to you if you plan to claim a tax credit for their services in 1989. You must include their name, address and TIN on your 1989 income tax return. The IRS has developed Form W-10 — Dependent Care Provider's Identification and Certification — for you to use. This form is available at IRS offices or by calling 1-800-424-3676.

Senior citizens have not been spared in 1989 either. They will have to pay a new supplemental premium for expanded Medicare coverage. Most people automatically become eligible for Medicare when they turn 65 -- even if they don't file for it.

To pay for the new Catastrophic Coverage Act of 1988, a surtax is being applied to all 1989 tax liabilities. "For every $150 in taxes you pay Uncle Sam in 1989, you will have to tack on another $22.50 for this new Medicare expansion," says Dahlgard.

He recommends that people age 65 and over either increase their federal estimated tax payments or their withholding to cover the premium. "However, the IRS says for 1989, no estimated tax penalty will be charged for underpayment of the supplemental premium," he adds. Additional information can be found in the IRS Publication 934 — called Supplemental Medicare Premium — which is available at IRS offices or by calling 1-800-424-3676.

Mammography Testing Available This Month

Mammographies will be available to Grumman women through the Medical Department in Bethpage, June 19-23 and 28-30. Appointments will be scheduled between 10 a.m. and 4 p.m.

The $65 fee, roughly half the normal cost, is reimbursable under the Grumman/Travelers Insurance Plan. It is not covered under HMOs. Confidential results will be sent to you within 72 hours.

Insurance reimbursement will follow American Cancer Society guidelines. Women 35-40 should undergo a baseline mammography. Women 40-50 should have the procedure done every two years, and those over 50 should do it on an annual basis. Under 40, you must have a doctor's prescription to be covered by the Grumman/ Travelers Insurance Plan.

Mammographies will be offered in Great River and Calverton later this year. "It's an invaluable procedure that a lot of women don't get because they say it's inconvenient or they don't have the time," says John Brody, health services manager. "We hope by offering this service at Grumman, more women will take the test."

Here are some facts to consider. One out of every 10 women will develop breast cancer. Breast cancer is the most common cause of death in American women — 40,000 will die from it this year. When breast cancer is detected early, it is both treatable and curable.

The most valuable test in the early detection of breast cancer is a mammography. It is a low dose X-ray procedure that takes 10 minutes. With the procedure, 95 percent of breast cancer can be detected while still curable and before a lump can be felt. And there are 25-30 percent fewer deaths among women who have periodic mammographies.

To schedule an appointment, call Medical at (516) 575-2103.

Medicare Surtax

If you are 65 years or older, the 1989 Medicare supplemental premium is determined by dividing your 1989 federal tax liability by $150 and multiplying the result by $22.50.

The supplemental premium rate will increase from $22.50 in 1989 to $37.50 in 1990. In 1991, it will be $39; in 1992, $40.50; in 1993, $42.

There is a ceiling on how much you can pay. The maximum for 1989 is $800. Ceilings for upcoming years are: $850 in 1990; $900 for 1991, $950 for 1992; and $1,050 for 1993.

Readership Survey

We don't want to do all the talking. We'd like to know what you think about the things you see in these pages. Your comments, suggestions and complaints are welcomed. Please take a few minutes and give us your opinions.

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Thanks For Giving. *The United Way of Long Island presented a plaque to members of the Grumman Retirees Club on Wednesday, May 31. Last year marked the first time that Grumman retirees were formally invited to contribute to the United Way. Their response was overwhelming, says Bob Morace (C), club president. He is flanked by Mary Harse, second vice president; and PhilomenaVilkaitis (R), first vice president.*